

SEQUENCE LISTING

<110> TAKASHIMA, Shou
 TSUJIMOTO, Masafumi
 TSUJI, Shuichi

<120> GLYCOSYLATING ENZYME

<130> P25687

<140> US 10/501,930

<141> 2004-07-29

<150> PCT/JP03/00883

<151> 2003-01-30

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<170> PatentIn version 3.3

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<211> 398

<212> PRT

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Ala Ala Leu Lys Thr Leu Trp Ser Pro Thr Thr Pro Val Pro Arg Thr
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Arg Asn Ser Thr Tyr Leu Asp Glu Lys Thr Thr Gln Ile Thr Glu Lys
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Cys Lys Asp Leu Gln Tyr Ser Leu Asn Ser Leu Ser Asn Lys Thr Arg
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Arg Tyr Ser Glu Asp Asp Tyr Leu Gln Thr Ile Thr Asn Ile Gln Arg
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Cys Pro Trp Asn Arg Gln Ala Glu Glu Tyr Asp Asn Phe Arg Ala Lys
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Leu Ala Ser Cys Cys Asp Ala Ile Gln Asp Phe Val Val Ser Gln Asn
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Asn Thr Pro Val Gly Thr Asn Met Ser Tyr Glu Val Glu Ser Lys Lys
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His Ile Pro Ile Arg Glu Asn Ile Phe His Met Phe Pro Val Ser Gln
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Pro Phe Val Asp Tyr Pro Tyr Asn Gln Cys Ala Val Val Gly Asn Gly
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Gly Ile Leu Asn Lys Ser Leu Cys Gly Ala Glu Ile Asp Lys Ser Asp
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Phe Val Phe Arg Cys Asn Leu Pro Pro Ile Thr Gly Ser Ala Ser Lys
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Asp Val Gly Ser Lys Thr Asn Leu Val Thr Val Asn Pro Ser Ile Ile
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Thr Leu Lys Tyr Gln Asn Leu Lys Glu Lys Lys Ala Gln Phe Leu Glu
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Asp Ile Ser Thr Tyr Gly Asp Ala Phe Leu Leu Leu Pro Ala Phe Ser
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Tyr Arg Ala Asn Thr Gly Ile Ser Phe Lys Val Tyr Gln Thr Leu Lys
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Glu Ser Lys Met Arg Gln Lys Val Leu Phe Phe His Pro Arg Tyr Leu
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Arg His Leu Ala Leu Phe Trp Arg Thr Lys Gly Val Thr Ala Tyr Arg
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Leu Ser Thr Gly Leu Met Ile Ala Ser Val Ala Val Glu Leu Cys Glu
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Asn Val Lys Leu Tyr Gly Phe Trp Pro Phe Ser Lys Thr Ile Glu Asp
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Thr Pro Leu Ser His His Tyr Tyr Asp Asn Met Leu Pro Lys His Gly
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Phe His Gln Met Pro Lys Glu Tyr Ser Gln Met Leu Gln Leu His Met
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Ala Arg Ile Leu Val Glu Glu Ser Arg Glu Ala Thr His Gly Thr Pro
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Ala Ala Leu Arg Thr Leu Arg Ser Pro Ala Thr Ala Val Pro Arg Ala
 50 55 60

Thr Asn Ser Thr Tyr Leu Asn Glu Lys Ser Leu Gln Leu Thr Glu Lys
 65 70 75 80

Cys Lys Asn Leu Gln Tyr Gly Ile Glu Ser Phe Ser Asn Lys Thr Lys
 85 90 95

Gly Tyr Ser Glu Asn Asp Tyr Leu Gln Ile Ile Thr Asp Ile Gln Ser
 100 105 110

Cys Pro Trp Lys Arg Gln Ala Glu Glu Tyr Ala Asn Phe Arg Ala Lys
 115 120 125

Leu Ala Ser Cys Cys Asp Ala Val Gln Asn Phe Val Val Ser Gln Asn
 130 135 140

Asn Thr Pro Val Gly Thr Asn Met Ser Tyr Glu Val Glu Ser Lys Lys
 145 150 155 160

Glu Ile Pro Ile Lys Lys Asn Ile Phe His Met Phe Pro Val Ser Gln
 165 170 175

Pro Phe Val Asp Tyr Pro Tyr Asn Gln Cys Ala Val Val Gly Asn Gly
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Gly	Ile	Leu	Asn	Lys	Ser	Leu	Cys	Gly	Thr	Glu	Ile	Asp	Lys	Ser	Asp	195	200	205
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Asp	Val	Gly	Ser	Lys	Thr	Asn	Leu	Val	Thr	Ile	Asn	Pro	Ser	Ile	Ile	225	230	235
Thr	Leu	Lys	Tyr	Gly	Asn	Leu	Lys	Glu	Lys	Lys	Ala	Leu	Phe	Leu	Glu	245	250	255
Asp	Ile	Ala	Thr	Tyr	Gly	Asp	Ala	Phe	Phe	Phe	Leu	Pro	Ala	Phe	Ser	260	265	270
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Glu	Ser	Lys	Ala	Arg	Gln	Lys	Val	Leu	Phe	Phe	His	Pro	Lys	Tyr	Leu	290	295	300
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Asn	Val	Lys	Leu	Tyr	Gly	Phe	Trp	Pro	Phe	Ser	Lys	Thr	Val	Glu	Asp	340	345	350
Ile	Pro	Val	Ser	His	His	Tyr	Tyr	Asp	Asn	Lys	Leu	Pro	Lys	His	Gly	355	360	365
Phe	His	Gln	Met	Pro	Lys	Glu	Tyr	Ser	Gln	Ile	Leu	Gln	Leu	His	Met	370	375	380

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Ser Asn Pro Ala Glu Pro Val Pro Ser Ser Leu Ser Phe Leu Glu Thr
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Arg Arg Leu Leu Pro Val Gln Gly Lys Gln Arg Ala Ile Met Gly Ala
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Ala His Glu Pro Ser Pro Pro Gly Gly Leu Asp Ala Arg Gln Ala Leu
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Pro Arg Ala His Pro Ala Gly Ser Phe His Ala Gly Pro Gly Asp Leu
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Gln Lys Trp Ala Gln Ser Gln Asp Gly Phe Glu His Lys Glu Phe Phe
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Ser Ser Gln Val Gly Arg Lys Ser Gln Ser Ala Phe Tyr Pro Glu Asp
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His	Arg	Arg	Gln 180	Arg	Arg	Ser	His	Val 185	Leu	Glu	Glu	Gly	Asp 190	Asp	Gly
Asp	Arg	Leu 195	Tyr	Ser	Ser	Met	Ser 200	Arg	Ala	Phe	Leu	Tyr 205	Arg	Leu	Trp
Lys	Gly 210	Asn	Val	Ser	Ser	Lys 215	Met	Leu	Asn	Pro	Arg 220	Leu	Gln	Lys	Ala
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Ser	Arg	Ala	Arg 260	Val	Arg	Thr	Leu	Asp 265	Gly	Thr	Glu	Ala	Pro 270	Phe	Ser
Ala	Leu	Gly 275	Trp	Arg	Arg	Leu	Val 280	Pro	Ala	Val	Pro	Leu 285	Ser	Gln	Leu
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Ser His His Phe Ile Asp Ser Ser Leu Tyr Lys Asp Val Ile Leu Val
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Ala Trp Asp Pro Ala Pro Tyr Ser Ala Asn Leu Asn Leu Trp Tyr Lys
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Lys Pro Asp Tyr Asn Leu Phe Thr Pro Tyr Ile Gln His Arg Gln Arg
 385 390 395 400

Asn Pro Asn Gln Pro Phe Tyr Ile Leu His Pro Lys Phe Ile Trp Gln
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Leu Trp Asp Ile Ile Gln Glu Asn Thr Lys Glu Lys Ile Gln Pro Asn
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Pro Pro Ser Ser Gly Phe Ile Gly Ile Leu Ile Met Met Ser Met Cys
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Arg Glu Val His Val Tyr Glu Tyr Ile Pro Ser Val Arg Gln Thr Glu
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Leu Cys His Tyr His Glu Leu Tyr Tyr Asp Ala Ala Cys Thr Leu Gly
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Ala Tyr His Pro Leu Leu Tyr Glu Lys Leu Leu Val Gln Arg Leu Asn
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Ser Asn Pro Ala Ala Pro Met Pro Ser Ser Phe Ser Phe Leu Glu Ser
          35           40           45

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Arg Gly Leu Leu Pro Leu Gln Gly Lys Gln Arg Val Ile Met Gly Ala
50           55           60

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Leu Gln Glu Pro Ser Leu Pro Arg Ser Leu Asp Ala Ser Lys Val Leu
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Leu Asp Ser His Pro Glu Asn Pro Phe His Pro Trp Pro Gly Asp Pro
 85 90 95

Gln Lys Trp Asp Gln Ala Pro Asn Gly Phe Asp Asn Gly Asp Glu Phe
 100 105 110

Phe Thr Ser Gln Val Gly Arg Lys Ser Gln Ser Ala Phe Tyr Pro Glu
 115 120 125

Glu Asp Ser Tyr Phe Phe Val Ala Asp Gln Pro Glu Leu Tyr His His
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Arg Gln Gly Ala Leu Glu Leu Pro Ser Pro Gly Glu Thr Ser Trp Arg
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Ser Gly Pro Val Gln Pro Lys Gln Lys Leu Leu His Pro Arg Arg Gly
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Ser Leu Pro Glu Glu Ala Tyr Asp Ser Asp Met Leu Ser Ala Ser Met
 180 185 190

Ser Arg Ala Phe Leu Tyr Arg Leu Trp Lys Gly Ala Val Ser Ser Lys
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Met Leu Asn Pro Arg Leu Gln Lys Ala Met Arg Tyr Tyr Met Ser Phe
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Asn Lys His Gly Val Arg Phe Arg Arg Arg Gly Arg Arg Glu Ala Thr
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Arg Thr Gly Pro Glu Leu Leu Cys Glu Met Arg Arg Arg Val Arg Val
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Arg Thr Leu Asp Gly Arg Glu Ala Pro Phe Ser Gly Leu Gly Trp Arg

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	370	375
Leu Phe Thr Pro Tyr Ile Gln His Arg Arg Lys Tyr Pro Thr Gln Pro		
385	390	395
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	405	410
Gln Glu Asn Thr Arg Glu Lys Ile Gln Pro Asn Pro Pro Ser Ser Gly		
	420	425
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Tyr Glu Tyr Ile Pro Ser Val Arg Gln Thr Glu Leu Cys His Tyr His		
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Glu Leu Tyr Tyr Asp Ala Ala Cys Thr Leu Gly Ala Tyr His Pro Leu
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Leu Tyr Glu Lys Leu Leu Val Gln Arg Leu Asn Thr Gly Thr Gln Ala
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